



Alpha 11

2G/3G/4G/5G & Dual Band WiFi ADHESIVE FLAT BLADE ANTENNA



Key Features

- Good Wideband Cellular Coverage
- Dual Band WiFi coverage
- Slim discreet design

General Description

The Alpha 11 is an efficiently tuned PCB antenna that is suitable for a wide variety of RF and IoT modules, operating on 2G, 3G, 4G & 5G frequencies. The antenna also covers both WiFi frequency bands.

The Alpha 11 is a competent performer within a sleek radome. The Alpha 11 will suit cost conscious volume applications where a quality product and good performance is required.

Alternative connectors or cable lengths can be specified for volume orders.

Additional Considerations

- Mounts discretely in installation, good for covert use
- Meets all EU compliance criteria for electronic goods
- Intended for internal equipment use

A Adhesive	2G GSM	3G UMTS	4G LTE
LTE Cat M	LTE NB IoT	5G LTE	ISM 868
ISM 915	WLAN 2400	WLAN 5800	



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Electrical Specifications

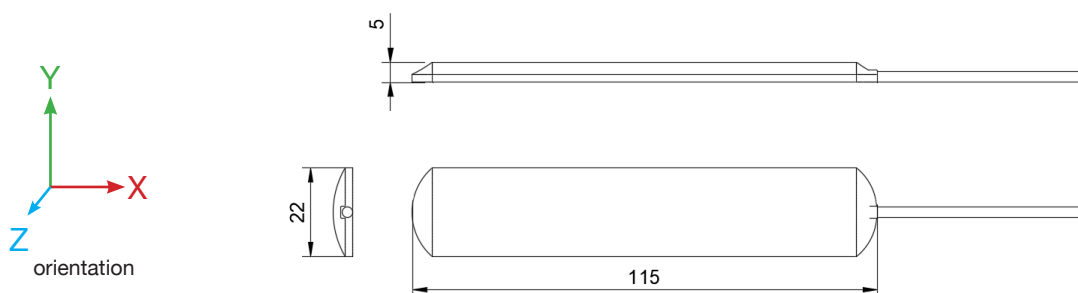
Impedance:	50 Ohm
Max input power:	60W
Polarization:	Vertical
Ground Plane Independent:	Yes

Environmental Specifications

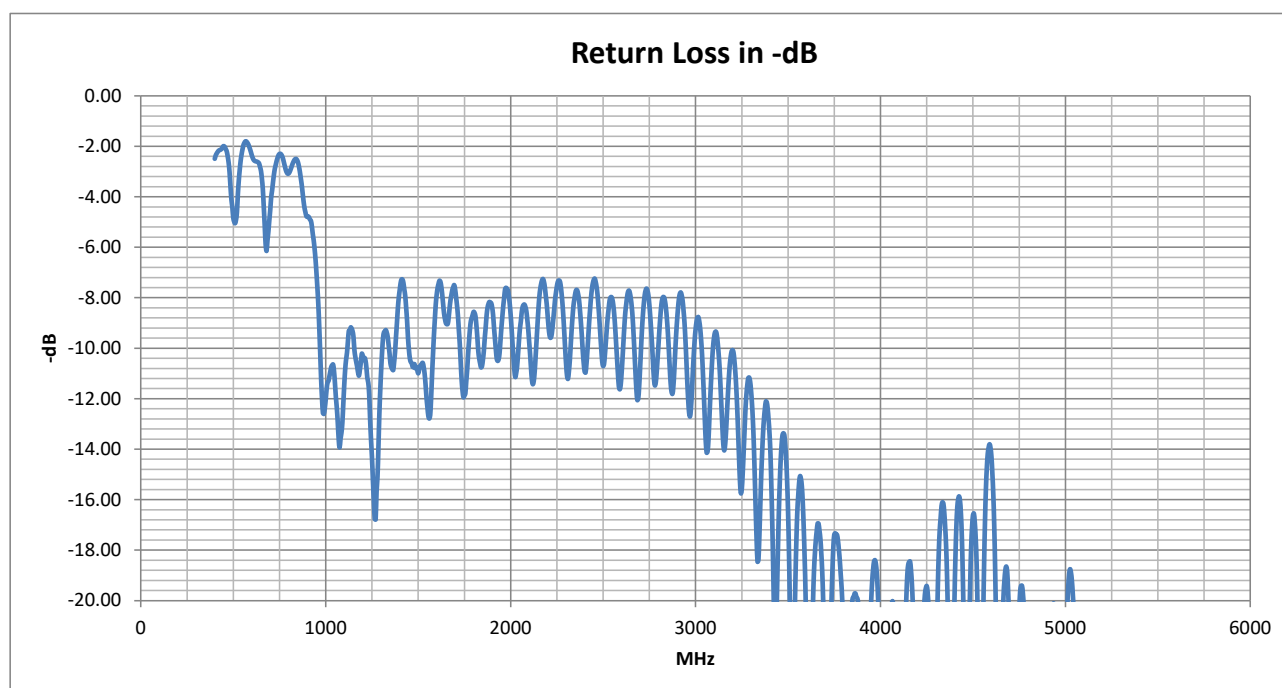
Operating temperature range:	-40 to +75°C
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Mechanical Specifications

Dimensions:	L115 x W22 x H5mm
Weight:	20g
Cable:	RG174
Connector:	SMA Male
Mounting:	Adhesive
Main Material:	ABS



Return Loss tested with 1m cable

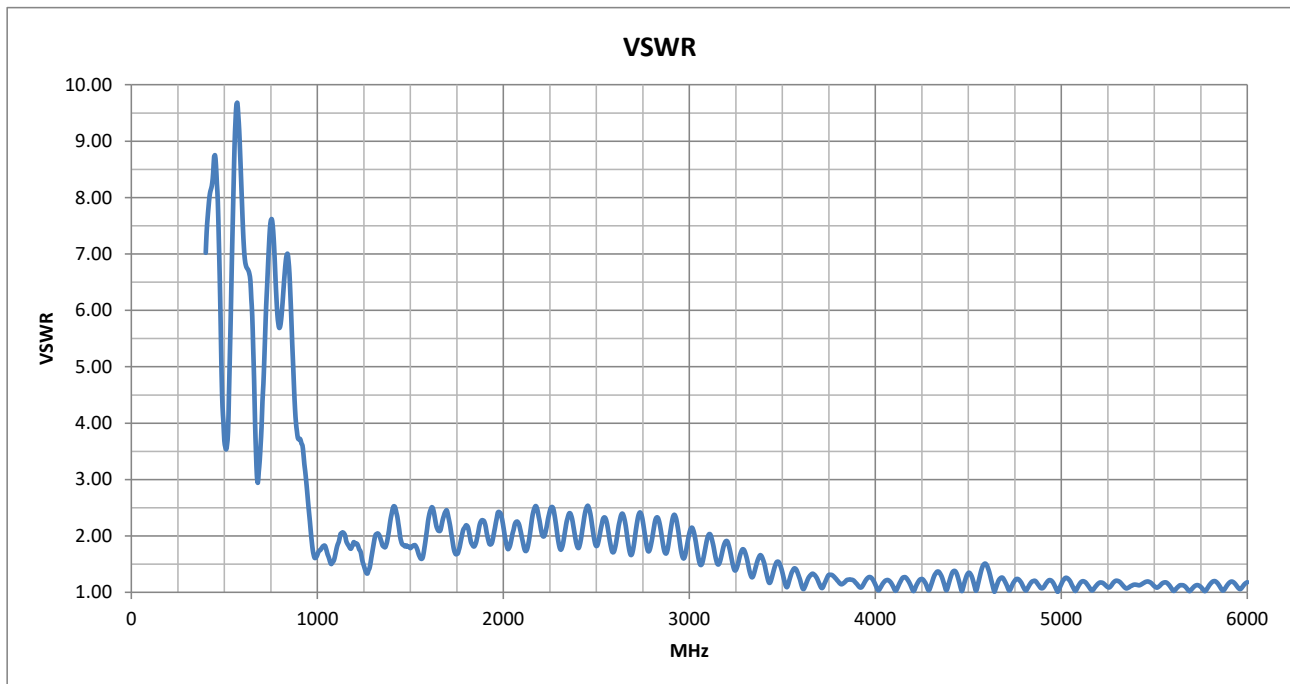




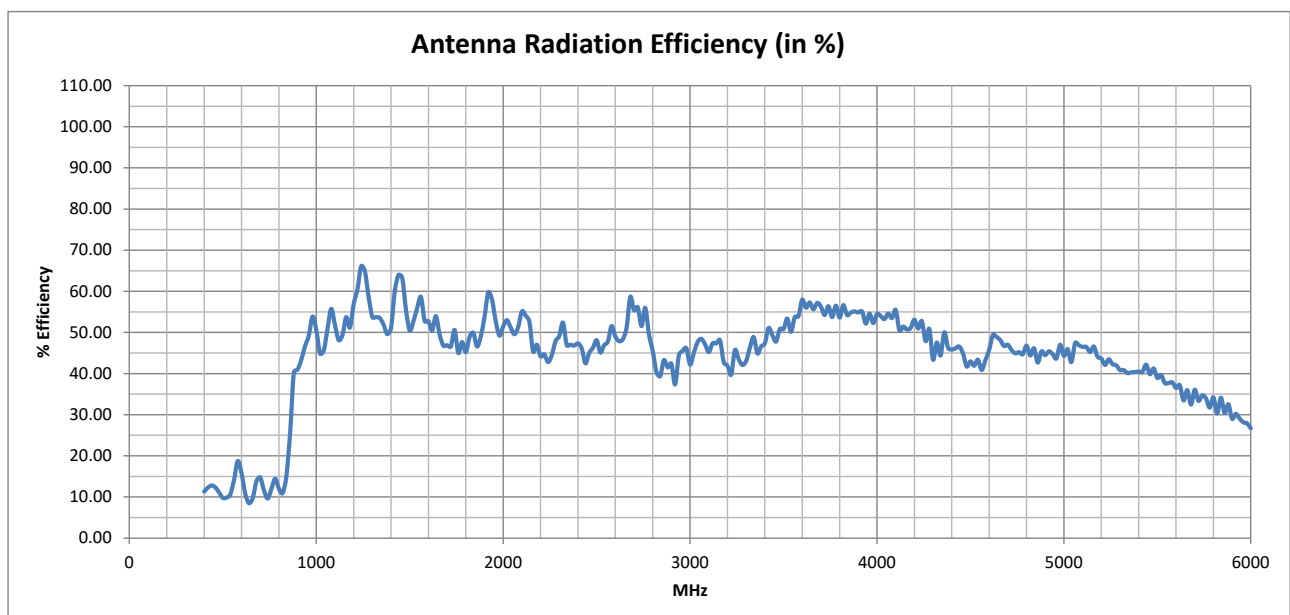
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VSWR tested with 1m cable



Radiation Efficiency tested with 1m cable





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LTE/5G Band Coverage

LTE, CAT-M/5G Bands	NB-IoT Band	Regional Coverage	Uplink	Downlink	Avg Efficiency % over band	Max VSWR over Band
1/n1	B1	Europe / Asia	1920-1980 MHz	2110-2170 MHz	54.89 / 50.83 ●	2.43 / 2.52
2/n2	B2	North America/Latin America/Caribbean	1850-1910 MHz	1930-1990 MHz	51.77 / 54.20 ●	2.28 / 2.43
3/n3	B3	Europe/Africa/Asia/Oceania	1710-1785 MHz	1805-1880 MHz	46.97 / 47.90 ●	2.25 / 2.26
4	B4	North America/Latin America/Caribbean	1710-1755 MHz	2110-2155 MHz	47.25 / 51.79 ●	2.25 / 2.33
5/n5	B5	Country Specific	824-849 MHz	869-894 MHz	17.15 / 35.57 ✖	7.00 / 5.41
7/n7		Latin America/Europe/Asia +	2500-2570 MHz	2620-2690 MHz	47.86 / 52.23 ●	2.33 / 2.40
8/n8	B8	Europe / Asia +	880-915 MHz	925-960 MHz	41.52 / 46.41 ●	4.25 / 3.47
11	B11	Country Specific	1427.9-1447.9 MHz	1475.9-1495.9 MHz	62.40 / 56.39 ●	2.41 / 1.83
12/n12	B12	North America/Caribbean +	699-716 MHz	729-746 MHz	13.37 / 11.03 ✖	5.63 / 7.59
13/n13	B13	North America/Caribbean +	777-787 MHz	746-756 MHz	12.78 / 10.75 ✖	6.56 / 7.62
14/n14	B14	Country Specific	788-798 MHz	758-768 MHz	13.21 / 11.98 ✖	5.94 / 7.62
17	B17	North America/Caribbean +	704-716 MHz	734-746 MHz	13.16 / 11.03 ✖	5.63 / 7.59
18/n18	B18	Country Specific	815-830 MHz	860-875 MHz	12.64 / 32.90 ✖	6.87 / 5.86
19	B19	Country Specific	830-845 MHz	875-890 MHz	17.15 / 35.57 ✖	7.00 / 4.60
20/n20	B20	Europe/Africa +	832-862 MHz	791-821 MHz	22.93 / 13.09 ✖	7.00 / 6.68
21		Country Specific	1447.9-1462.9 MHz	1495.9-1510.9 MHz	60.89 / 52.88 ●	1.99 / 1.82
25/n25	B25	Country Specific	1850-1915 MHz	1525-1559 MHz	51.77 / 55.77 ●	2.28 / 1.84
26/n26	B26	Country Specific	814-849 MHz	859-894 MHz	15.86 / 30.43 ✖	7.00 / 6.28
28/n28	B28	Latin America/Europe/Asia +	703-748 MHz	758-803 MHz	11.03 / 11.77 ✖	7.59 / 7.62
29/n29		Country Specific	-	717-728 MHz	11.97 ✖	6.43
30/n30		Country Specific	2305-2315 MHz	2350-2360 MHz	50.73 / 46.94 ●	1.80 / 2.41
31	B31	Country Specific	452.5-457.5 MHz	462.5-467.5 MHz	12.53 / 11.68 ✖	8.75 / 8.24
32		Country Specific	-	1452-1496 MHz	58.29 ●	1.92
38/n38		Europe +	2570-2620 MHz		49.03 ●	2.19
39/n39		Country Specific	1880-1920 MHz		54.13 ●	2.28
40/n40		Asia +	2300-2400 MHz		48.24 ●	2.41
41/n41		Country Specific	2496-2690 MHz		49.64 ●	2.40
42		Country Specific	3400-3600 MHz		51.47 ●	1.55
43		Country Specific	3600-3800 MHz		55.86 ●	1.33
46/n46		Country Specific	5150-5925 MHz		37.62 ●	1.21
48/n48		Country Specific	3550-3700 MHz		55.33 ●	1.43
65/n65		Country Specific	1920-2010 MHz	2110-2200 MHz	53.99 / 49.72 ●	2.43 / 2.53
66/n66	B66	Country Specific	1710-1780 MHz	2110-2200 MHz	47.33 / 49.72 ●	2.25 / 2.53
71/n71	B71	Country Specific	663-698 MHz	617-652 MHz	12.74 / 11.18 ✖	4.76 / 6.81

Table data for bands as detailed in 3GPP TS 36.101 & 38.101

● Usable Band

○ Adequate in good signal area

✖ Not Usable



5G Extended Table for Band Coverage

LTE/5G Band	NB-IoT Band	Uplink	Downlink	Avg Efficiency % over band	Max VSWR over Band
n24		1626.5 – 1660.5 MHz	1525 – 1559 MHz	51.28 / 55.77 ●	2.44 / 1.84
n34		2010 – 2025 MHz		51.85 ●	1.96
n47		5855 – 5925 MHz		30.88 ●	1.19
n50		1432 – 1517 MHz		57.64 ●	2.34
n51		1427 – 1432 MHz		61.98 ●	2.41
n53		2483.5 – 2495 MHz		47.16 ●	2.12
n67		738 – 758 MHz		11.03 ✖	7.62
n70	B70	1695 – 1710 MHz	1995 – 2020 MHz	46.74 / 51.19 ●	2.46 / 2.26
n74		1427 – 1470 MHz	1475 – 1518 MHz	60.66 / 55.47 ●	2.41 / 1.84
n75		1432 – 1517 MHz		57.64 ●	2.34
n76		1427 – 1432 MHz		61.98 ●	2.41
n77		3300 – 4200 MHz		52.69 ●	1.71
n78		3300 – 3800 MHz		52.01 ●	1.71
n79		4400 – 5000 MHz		45.10 ●	1.51
n80		1710 – 1785 MHz		46.97 ●	2.25
n81		880 – 915 MHz		41.52 ●	4.25
n82		832 – 862 MHz		22.93 ✖	7.00
n83		703 – 748 MHz		11.95 ✖	7.59
n84		1920 – 1980 MHz		54.89 ●	2.43
n85	B85	698 – 716 MHz	728 – 746 MHz	13.37 / 11.03 ✖	5.63 / 7.59
n86		1710 – 1780 MHz		47.33 ●	2.25
n89		824 – 849 MHz		17.15 ✖	7.00
n90		2496 – 2690 MHz		49.64 ●	2.40
n91		832 – 862 MHz	1427 – 1432 MHz	22.93 / 61.98 ○	7.00 / 2.41
n92		832 – 862 MHz	1432 – 1517 MHz	22.93 / 57.64 ○	7.00 / 2.34
n93		880 – 915 MHz	1427 – 1432 MHz	41.52 / 61.98 ●	4.25 / 2.41
n94		880 – 915 MHz	1432 – 1517 MHz	41.52 / 57.64 ●	4.25 / 2.34
n95		2010 – 2025 MHz		51.85 ●	1.96
n96		5925 – 7125 MHz		unmeasured	
n97		2300 – 2400 MHz		48.24 ●	2.41
n98		1880 – 1920 MHz		54.13 ●	2.28
n99		1626.5 – 1660.5 MHz		51.28 ●	2.44

Table data for bands as detailed in 3GPP TS 38.101

● Usable Band ○ Adequate in good signal area ✖ Not Usable

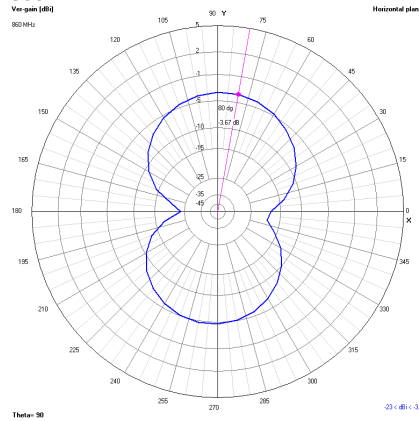


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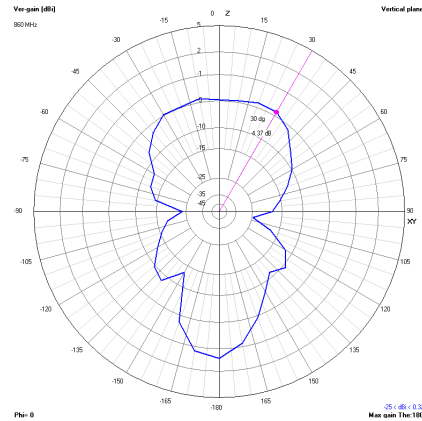
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Radiation Plots tested with 1 m cable

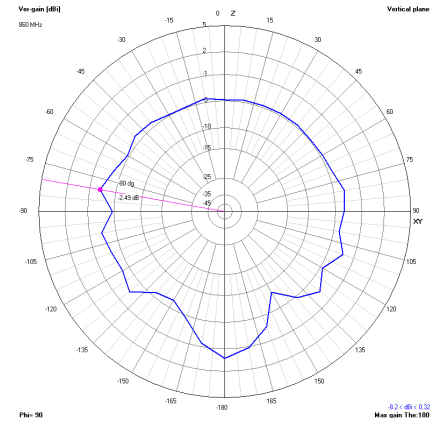
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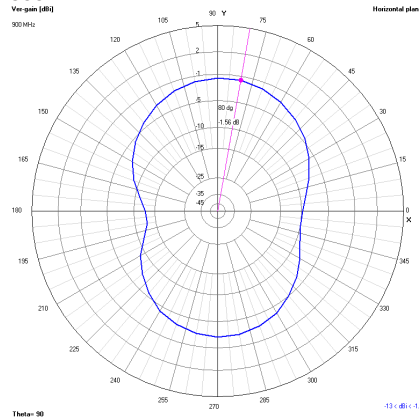
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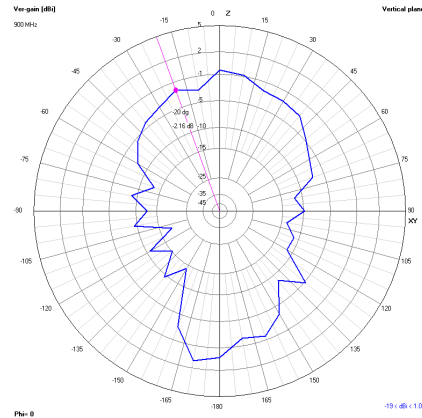
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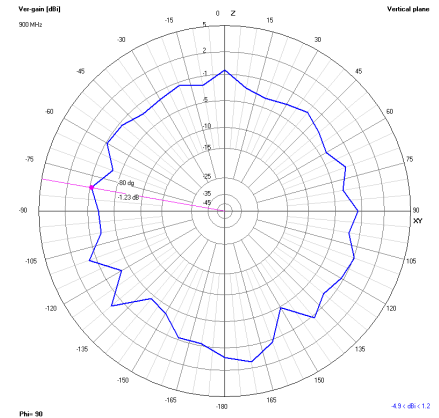
900 MHz XY



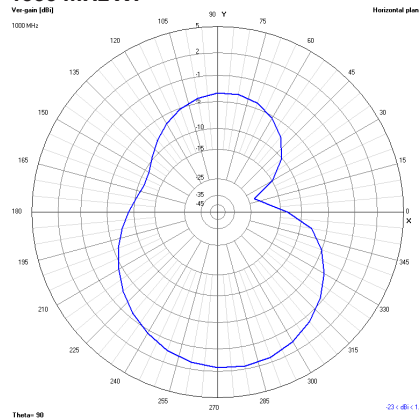
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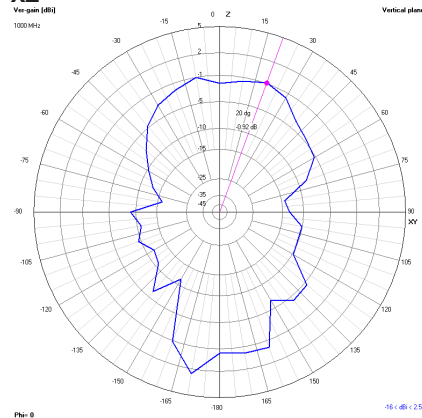
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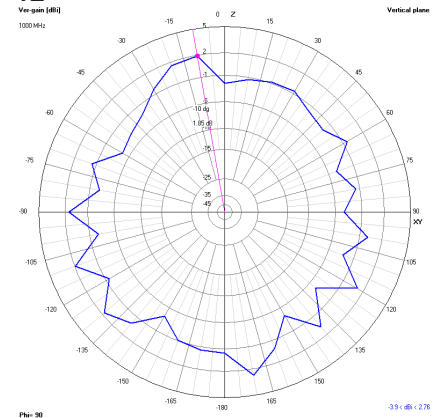
1000 MHz XY



XZ



YZ



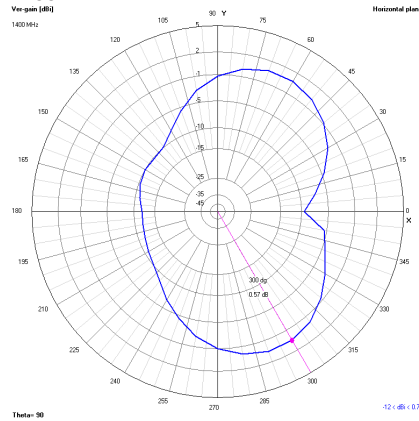


Alpha 11

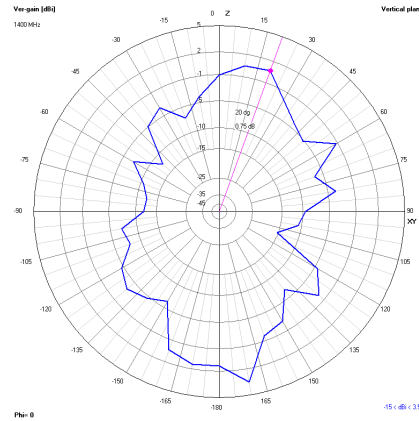
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Radiation Plots tested with 1 m cable

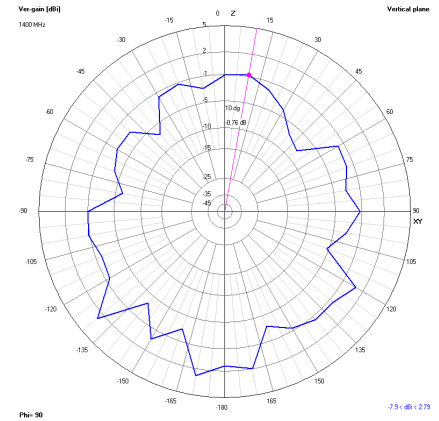
1400 MHz XY



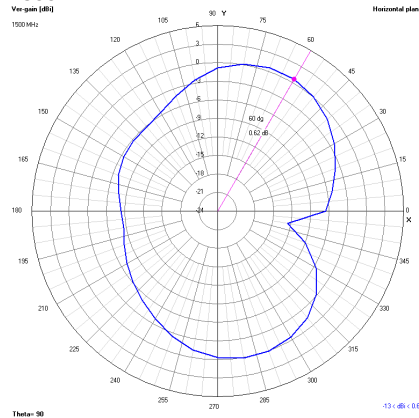
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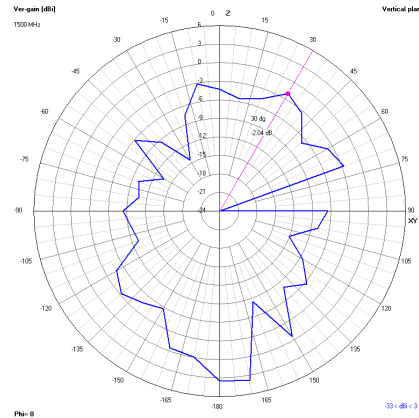
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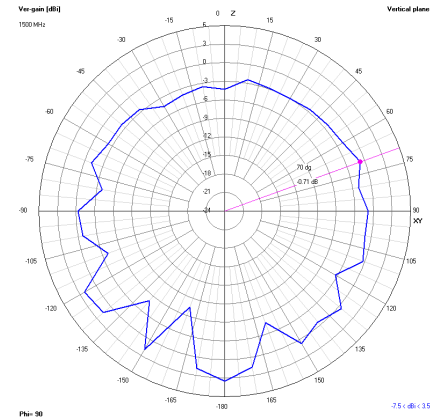
1500 MHz XY



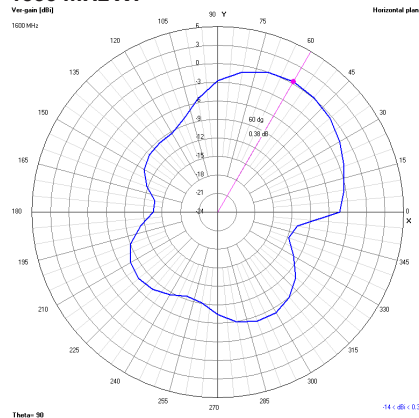
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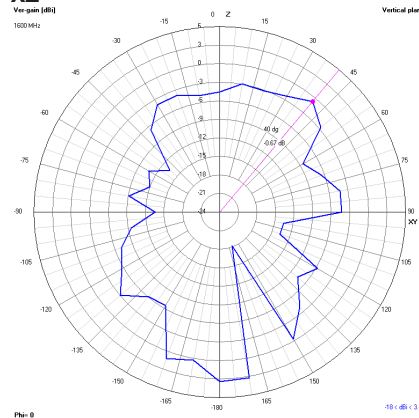
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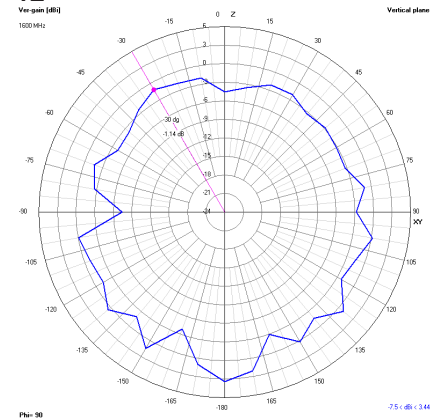
1600 MHz XY



XZ



YZ



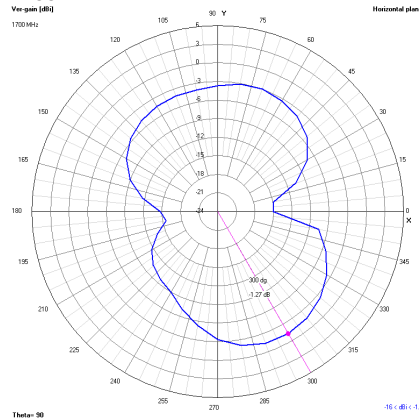


Alpha 11

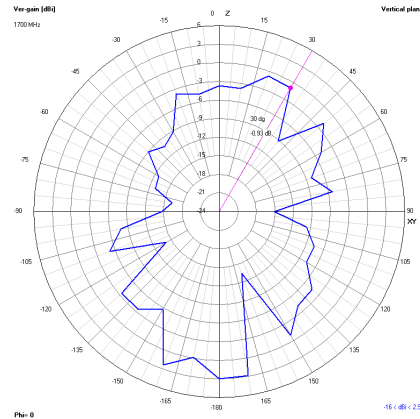
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Radiation Plots tested with 1 m cable

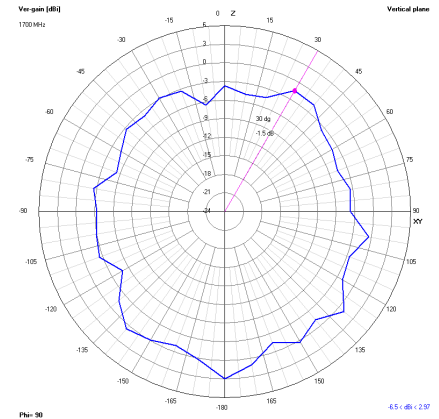
1700 MHz XY



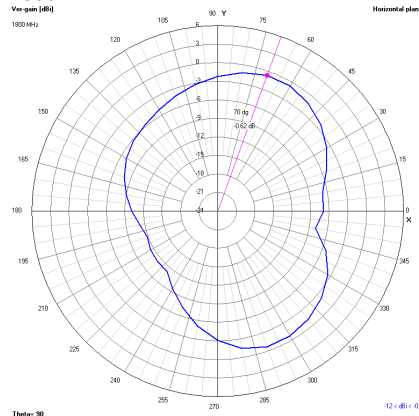
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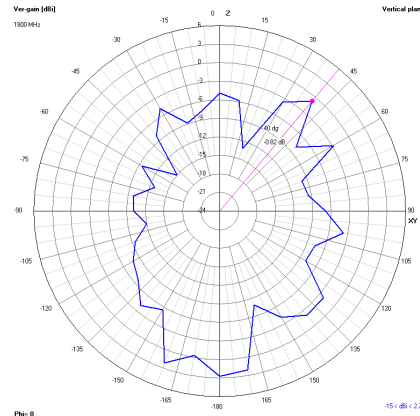
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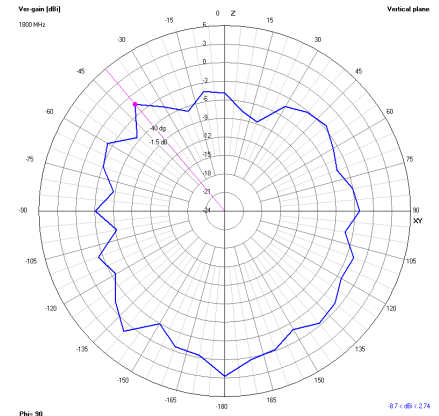
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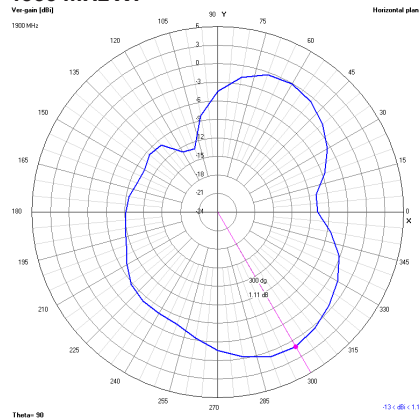
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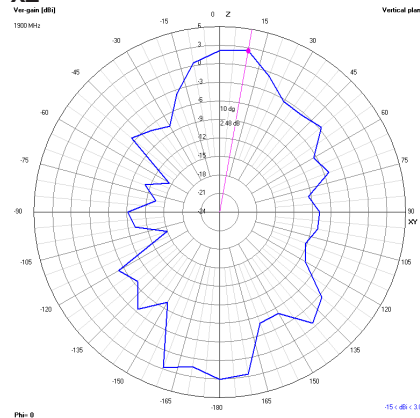
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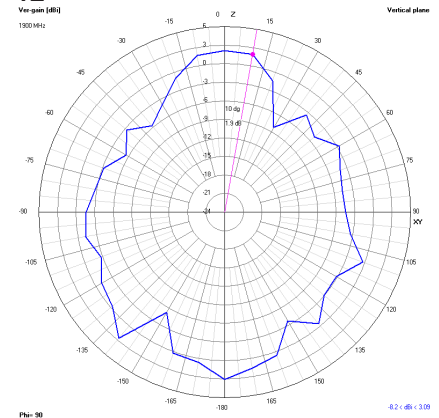
1900 MHz XY



XZ



YZ



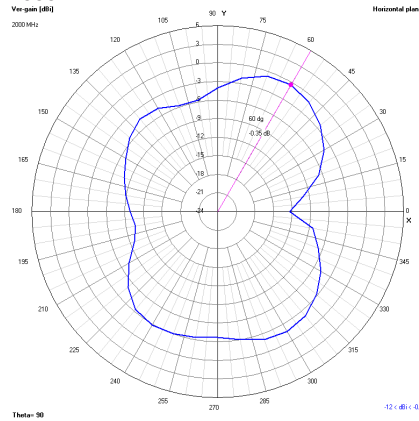


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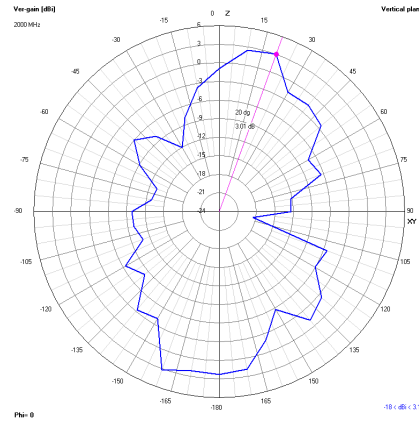
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Radiation Plots tested with 1 m cable

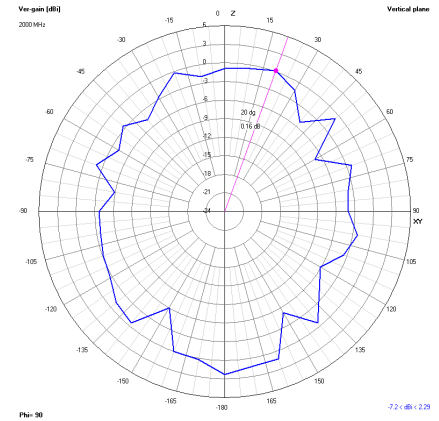
2000 MHz XY



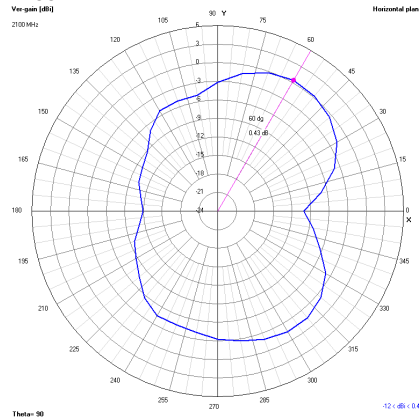
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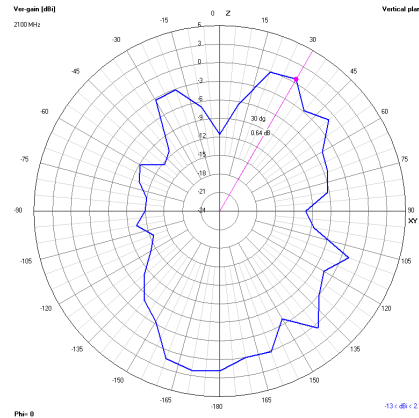
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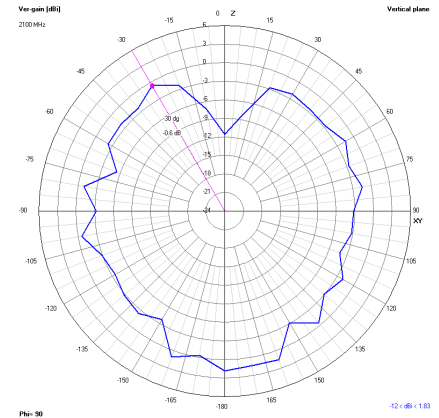
2100 MHz XY



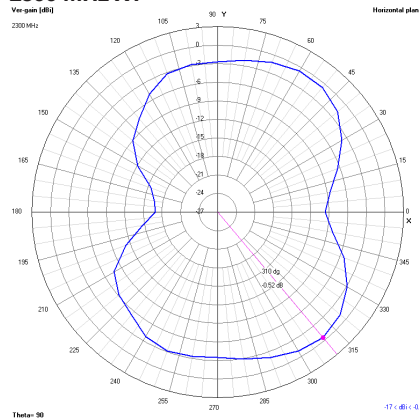
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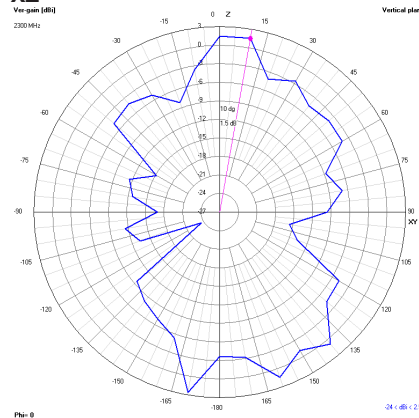
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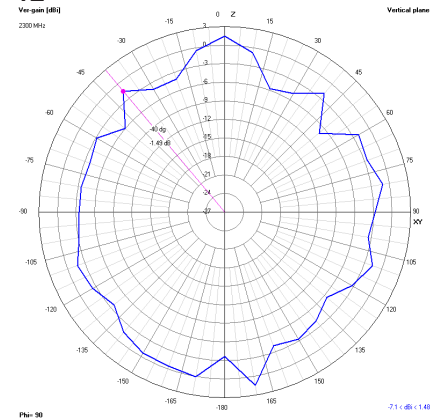
2300 MHz XY



XZ



YZ



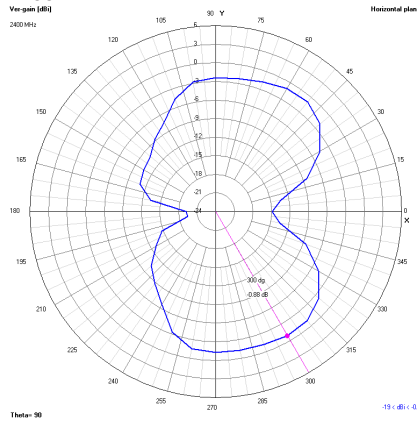


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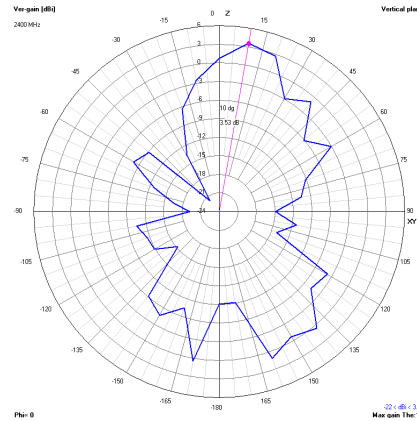
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Radiation Plots tested with 1 m cable

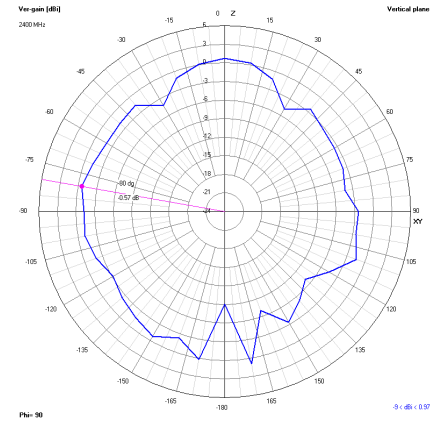
2400 MHz XY



XZ



YZ



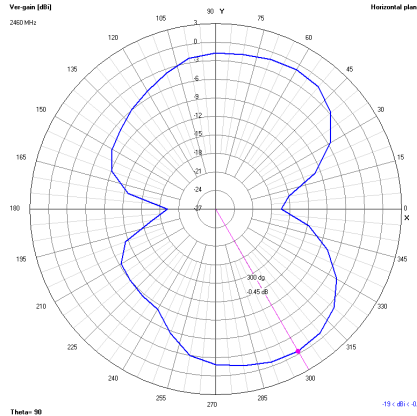
WiFi
Band
2.4
GHz

Eff %
47.32

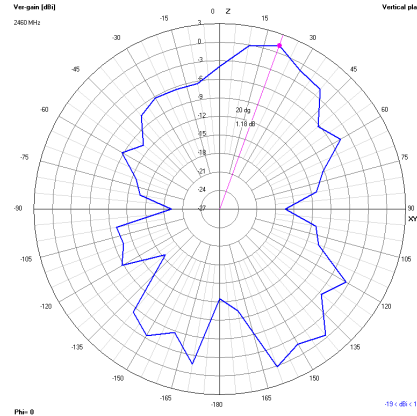
WiFi
Band
2.4
GHz

Eff %
47.32

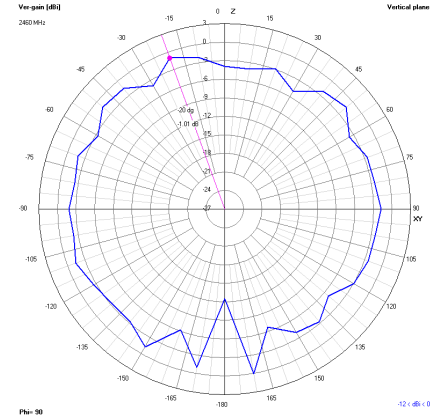
2460 MHz XY



XZ



YZ



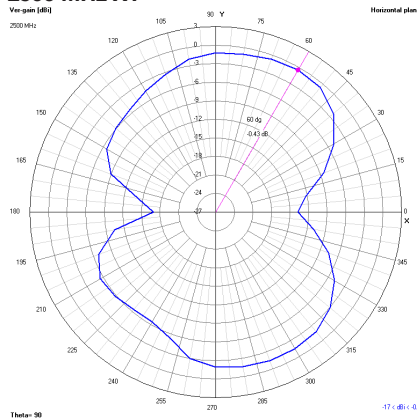
WiFi
Band
2.4
GHz

Eff %
44.98

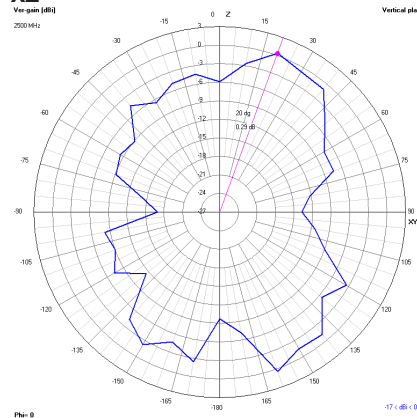
WiFi
Band
2.4
GHz

Eff %
44.98

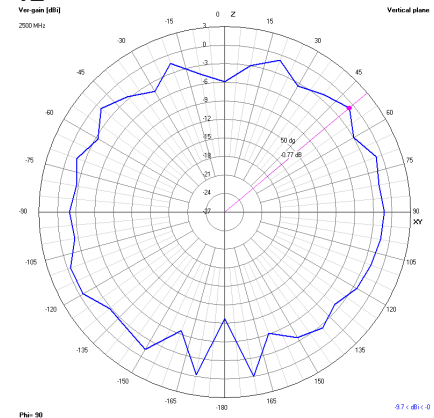
2500 MHz XY



XZ



YZ



WiFi
Band
2.4
GHz

Eff %
48.08

WiFi
Band
2.4
GHz

Eff %
48.08



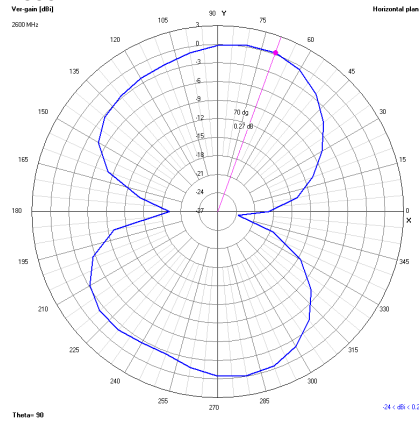


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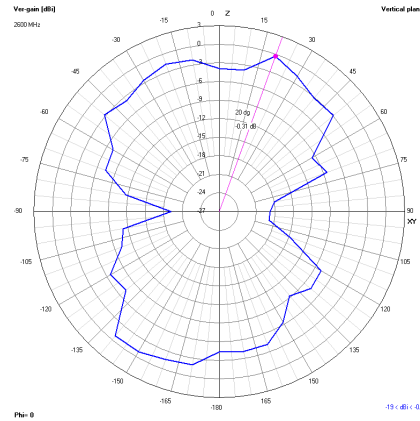
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Radiation Plots tested with 1 m cable

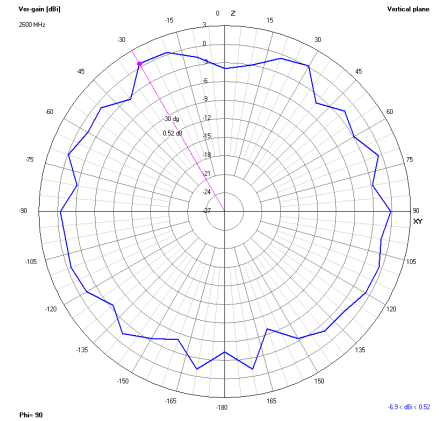
2600 MHz XY



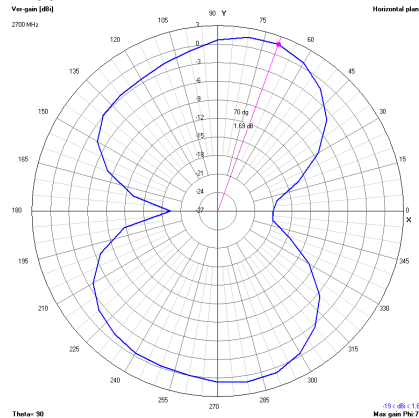
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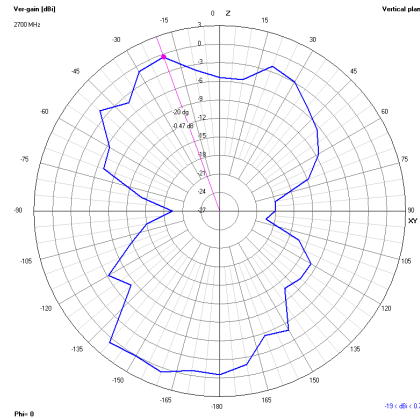
YZ



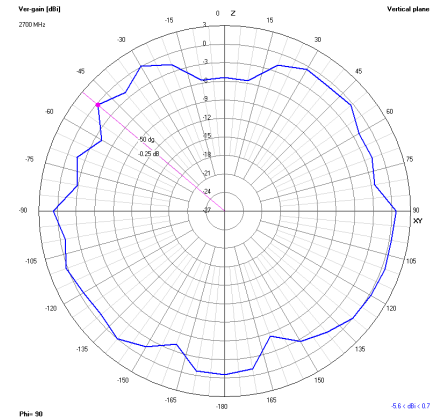
2700 MHz XY



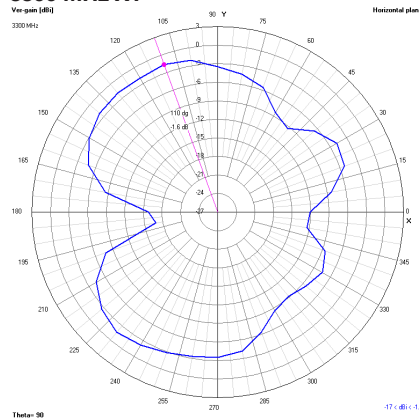
XZ



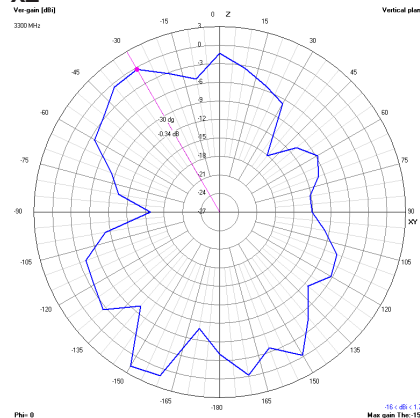
YZ



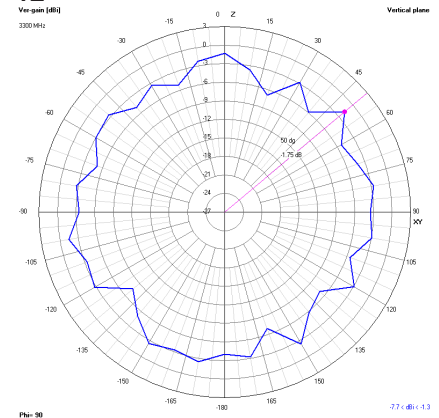
3300 MHz XY



XZ



YZ



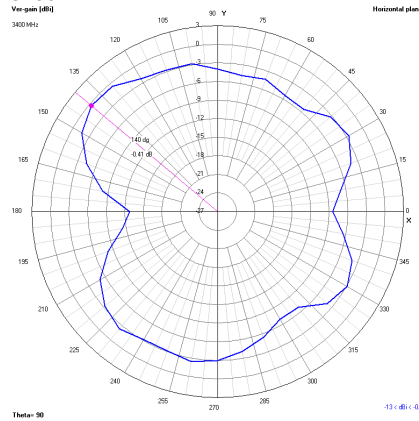


Alpha 11

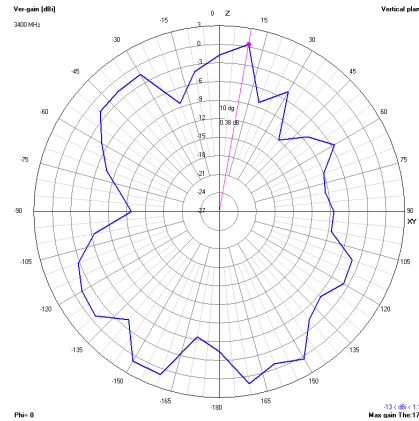
2G/3G/4G/5G & Dual Band WiFi ADHESIVE FLAT BLADE ANTENNA

Radiation Plots tested with 1 m cable

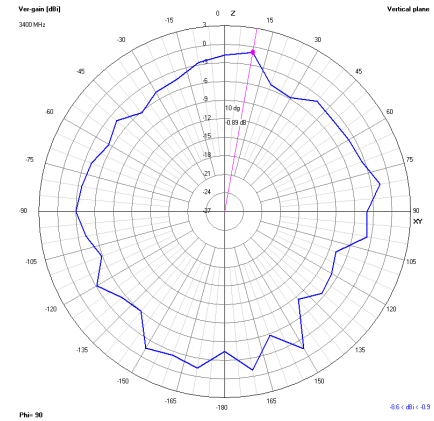
3400 MHz XY



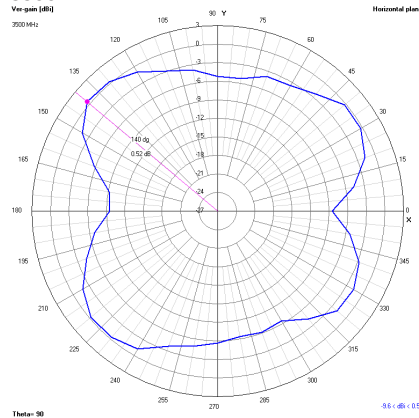
XZ



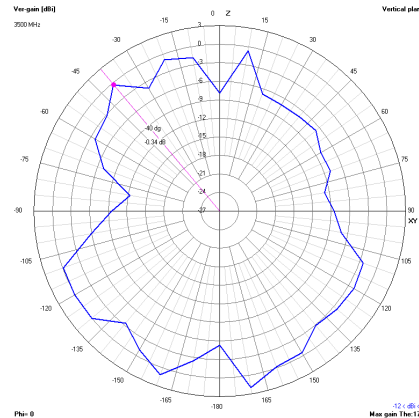
YZ



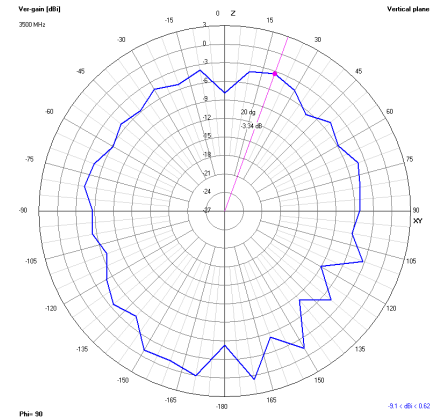
3500 MHz XY



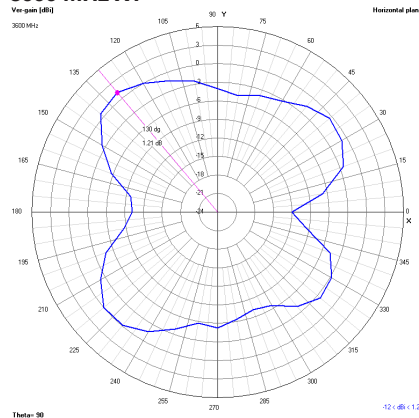
XZ



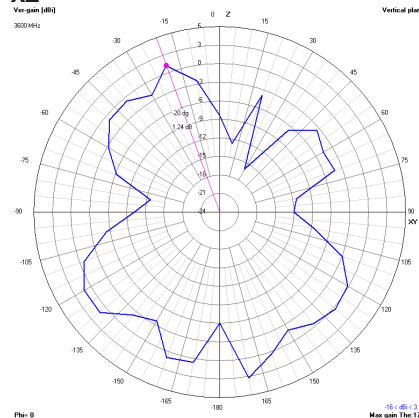
YZ



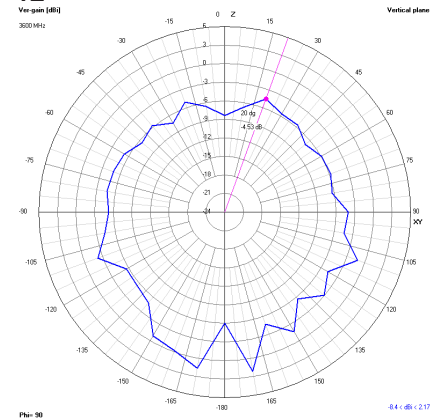
3600 MHz XY



XZ



YZ



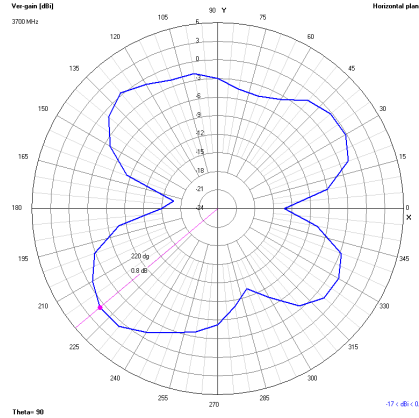


Alpha 11

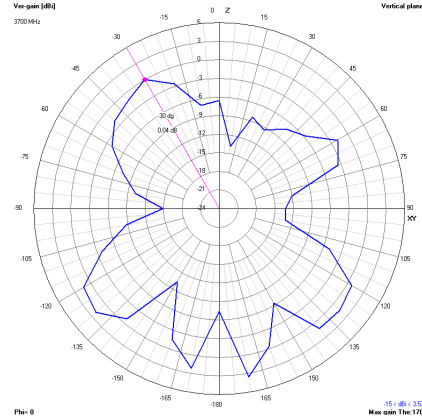
2G/3G/4G/5G & Dual Band WiFi ADHESIVE FLAT BLADE ANTENNA

Radiation Plots tested with 1 m cable

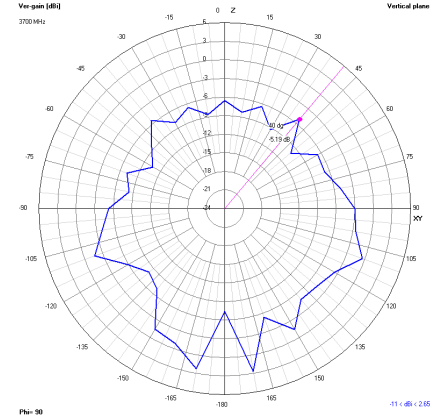
3700 MHz XY



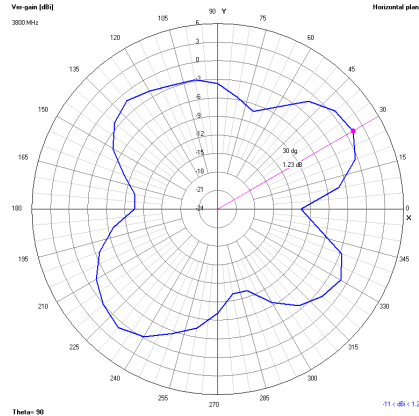
XZ



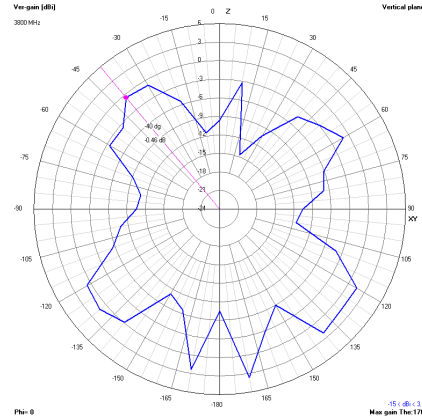
YZ



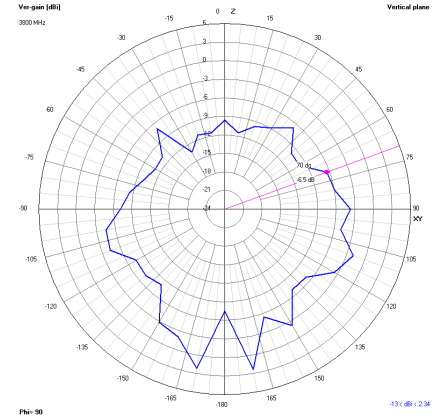
3800 MHz XY



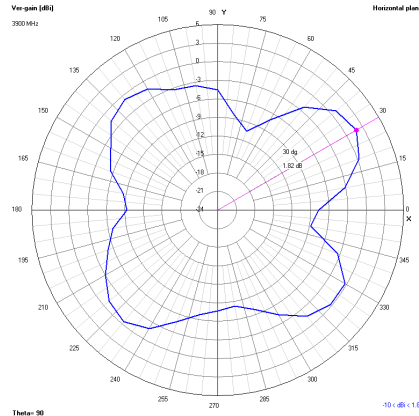
XZ



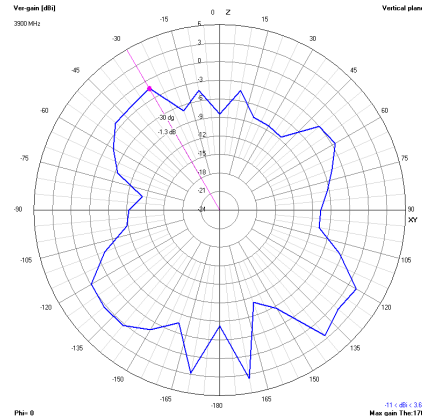
YZ



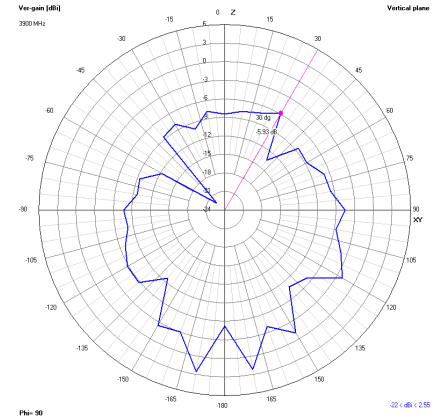
3900 MHz XY



XZ



YZ



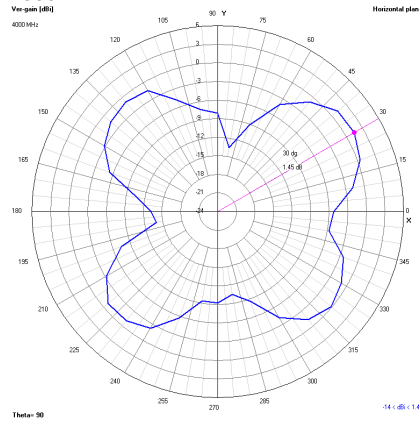


Alpha 11

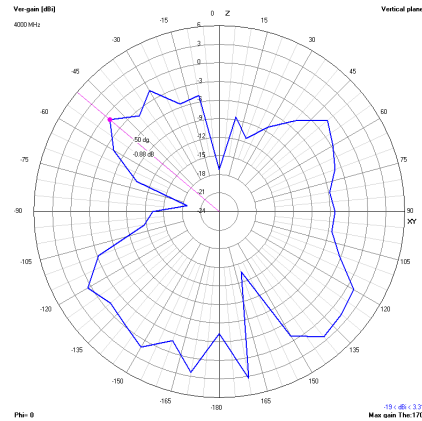
2G/3G/4G/5G & Dual Band WiFi ADHESIVE FLAT BLADE ANTENNA

Radiation Plots tested with 1 m cable

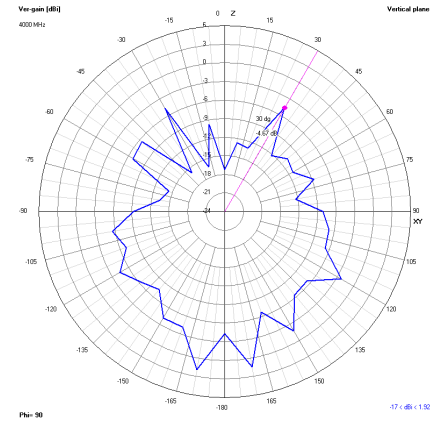
4000 MHz XY



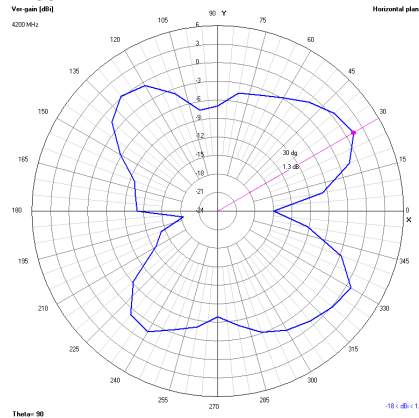
XZ



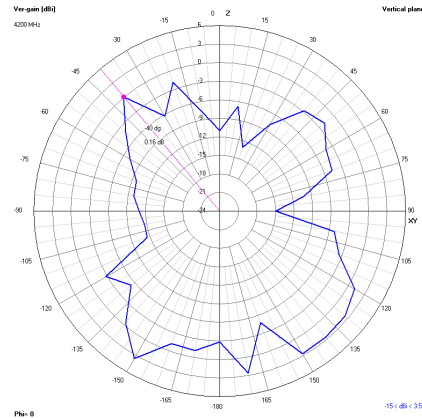
YZ



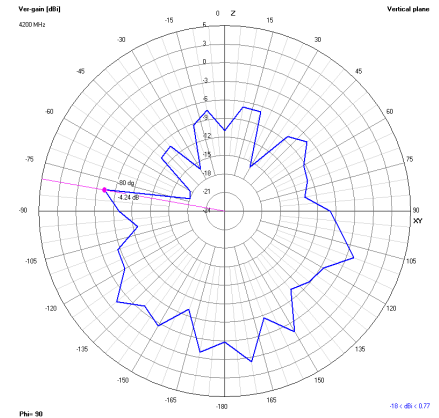
4200 MHz XY



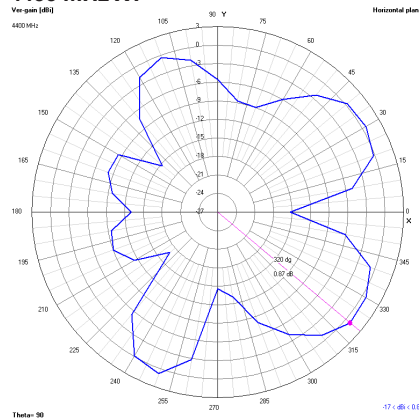
XZ



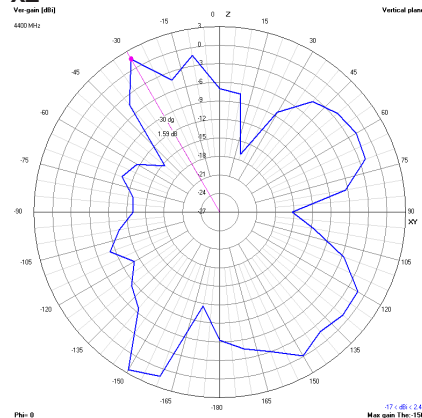
YZ



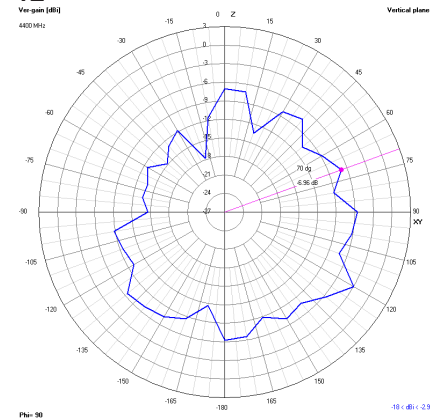
4400 MHz XY



XZ



YZ





Alpha 11

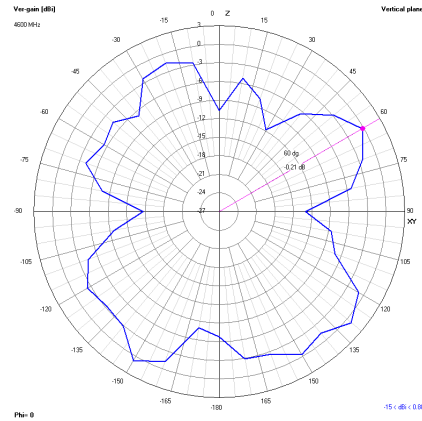
2G/3G/4G/5G & Dual Band WiFi ADHESIVE FLAT BLADE ANTENNA

Radiation Plots tested with 1 m cable

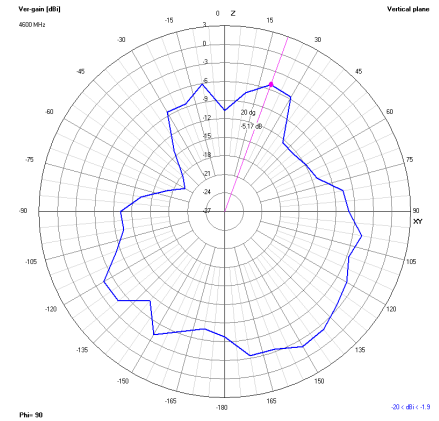
4600 MHz XY



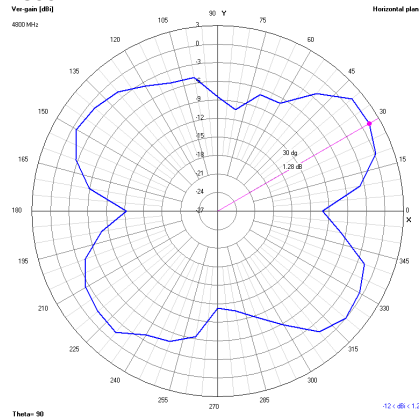
XZ



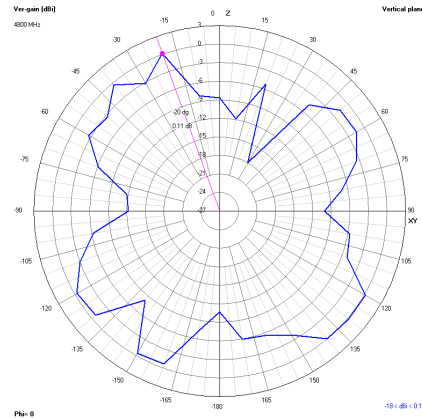
YZ



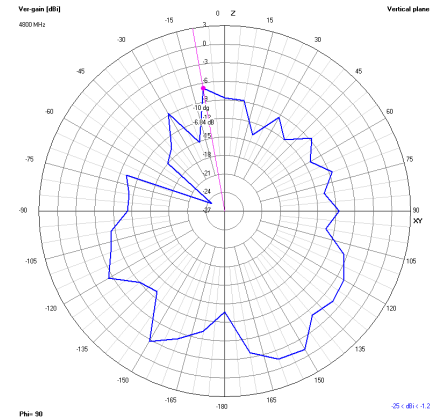
4800 MHz XY



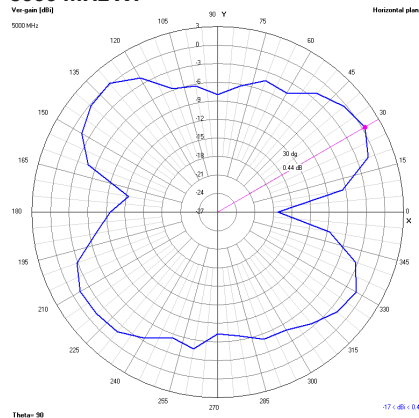
XZ



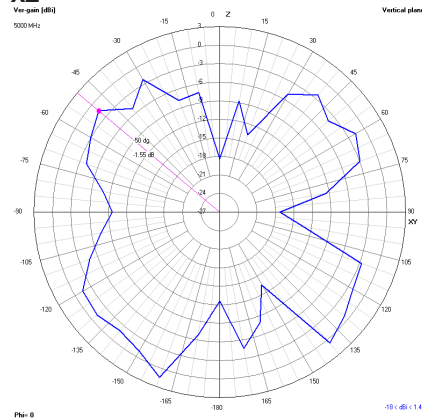
YZ



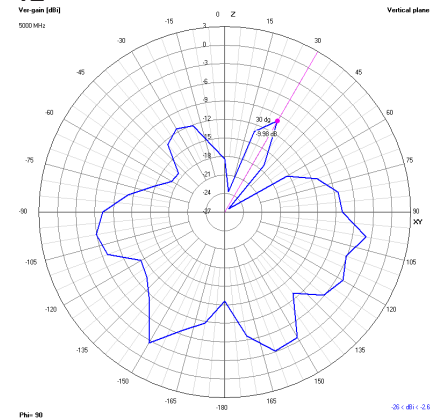
5000 MHz XY



XZ



YZ



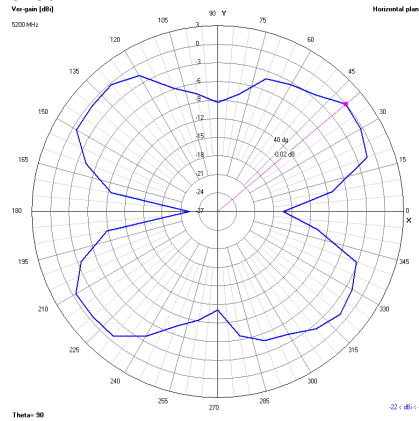


Alpha 11

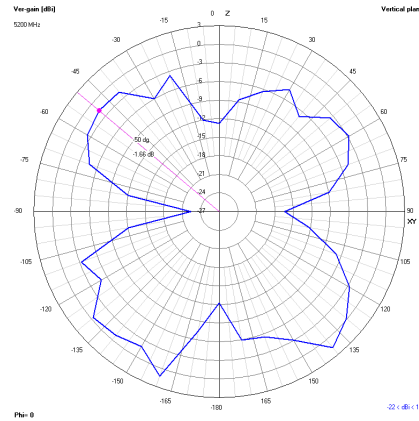
2G/3G/4G/5G & Dual Band WiFi ADHESIVE FLAT BLADE ANTENNA

Radiation Plots tested with 1 m cable

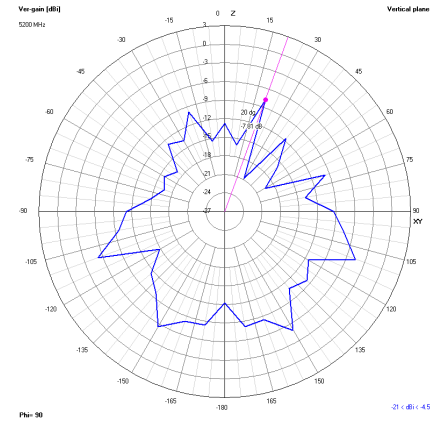
5200 MHz XY



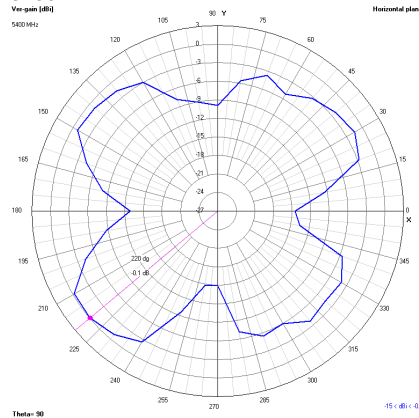
XZ



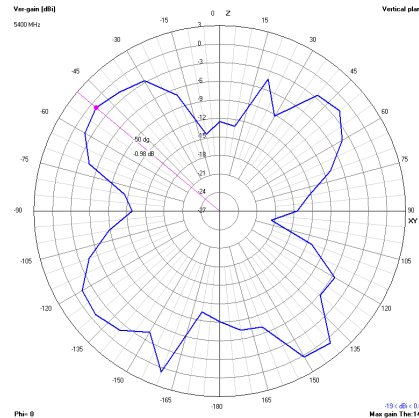
YZ



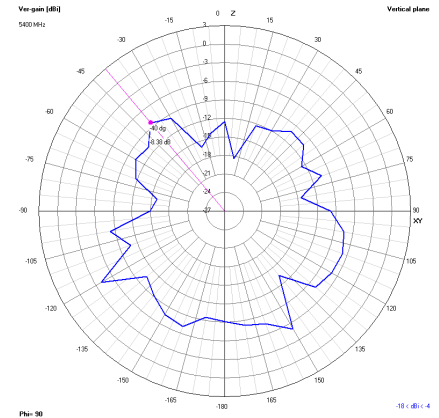
5400 MHz XY



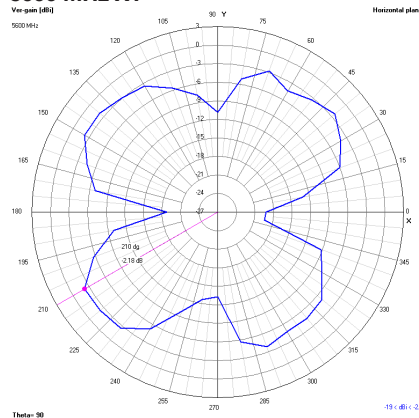
XZ



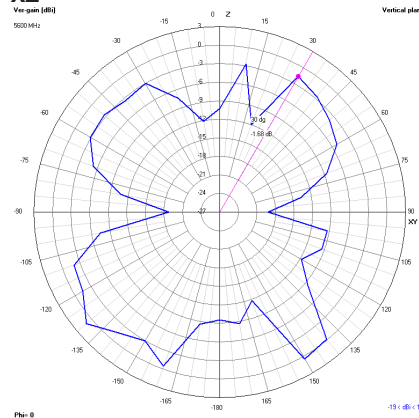
YZ



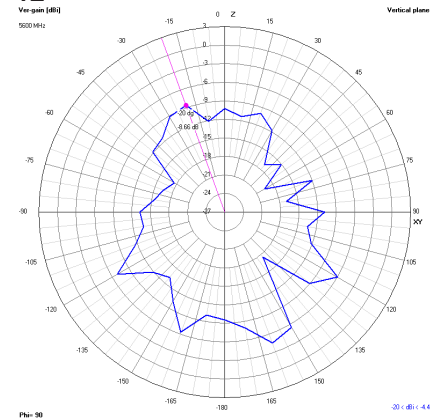
5600 MHz XY



XZ



YZ



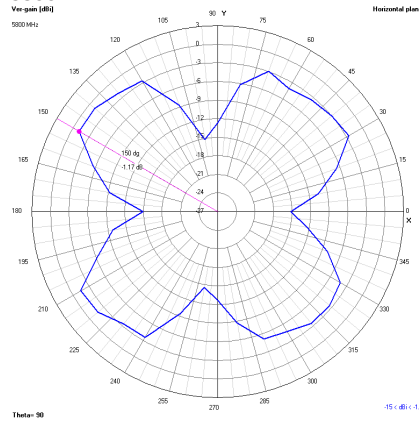


Alpha 11

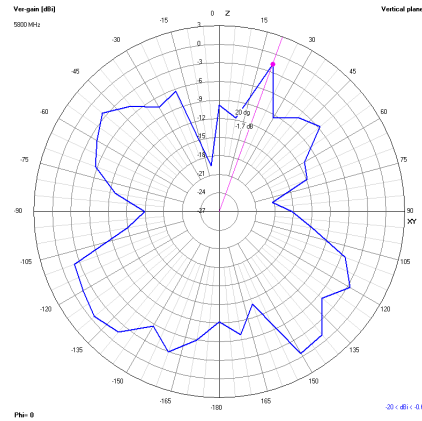
2G/3G/4G/5G & Dual Band WiFi ADHESIVE FLAT BLADE ANTENNA

Radiation Plots tested with 1 m cable

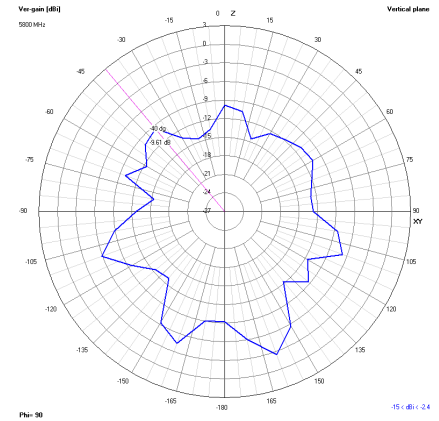
5800 MHz XY



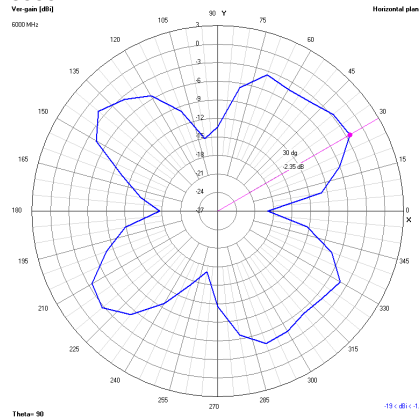
XZ



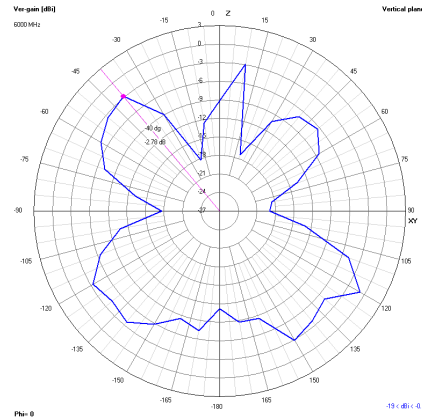
YZ



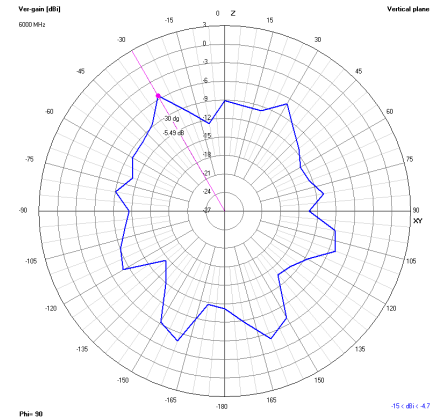
6000 MHz XY



XZ

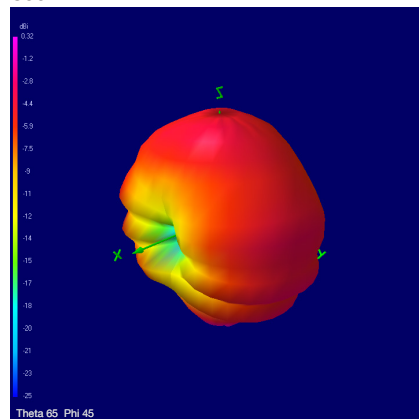


YZ

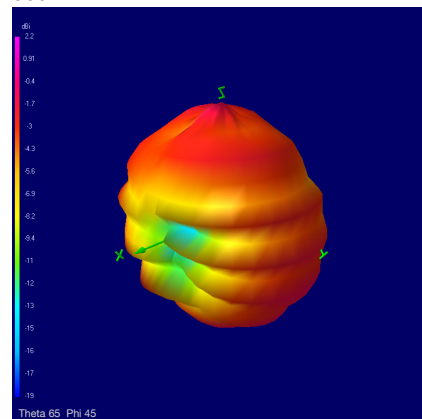


3D Radiation Plots tested with 1 m cable

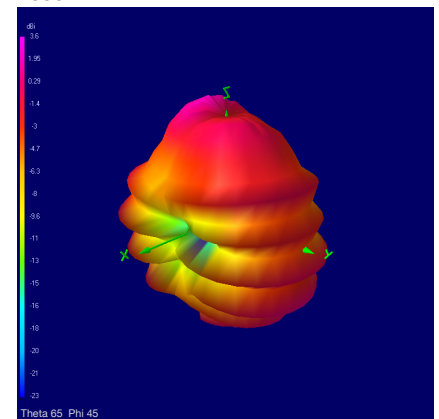
860 MHz



900 MHz



1000 MHz



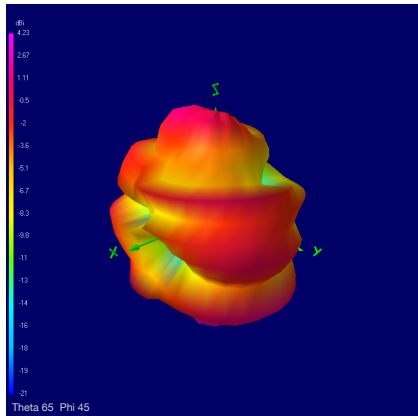


Alpha 11

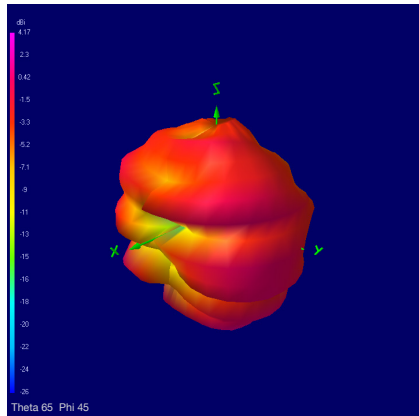
2G/3G/4G/5G & Dual Band WiFi ADHESIVE FLAT BLADE ANTENNA

3D Radiation Plots tested with 1 m cable

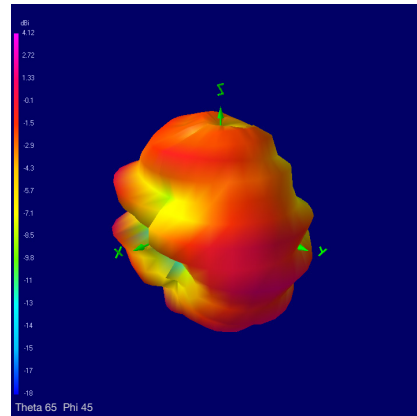
1400 MHz



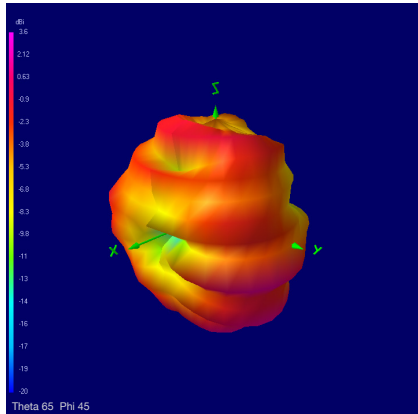
1500 MHz



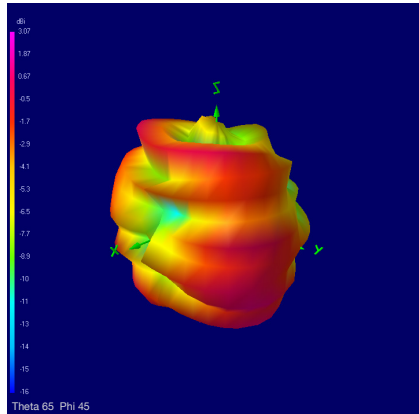
1600 MHz



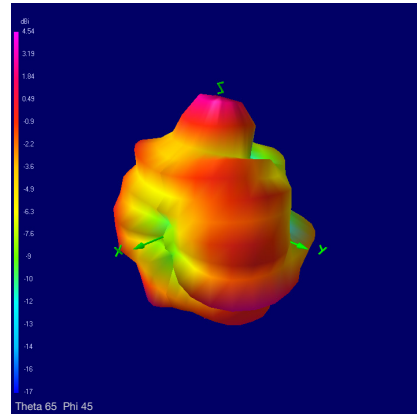
1700 MHz



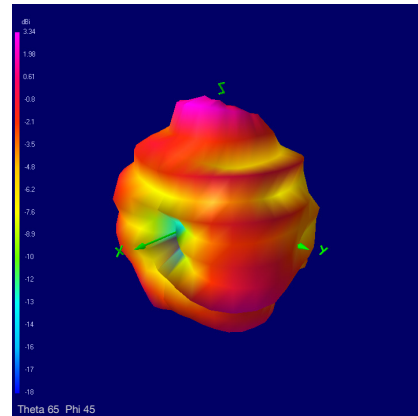
1800 MHz



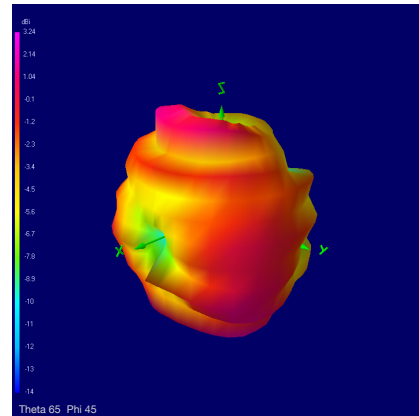
1900 MHz



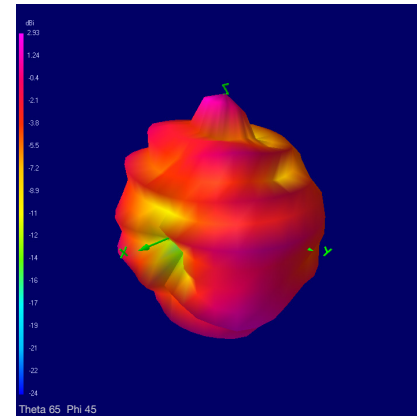
2000 MHz



2100 MHz



2300 MHz



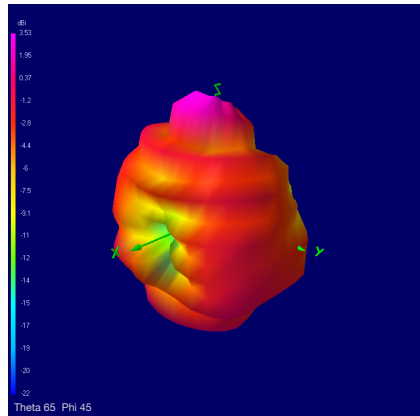


Alpha 11

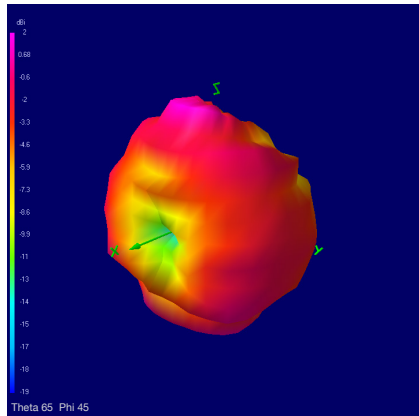
2G/3G/4G/5G & Dual Band WiFi ADHESIVE FLAT BLADE ANTENNA

3D Radiation Plots tested with 1 m cable

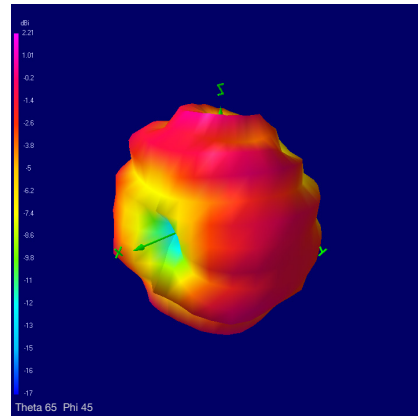
2400 MHz



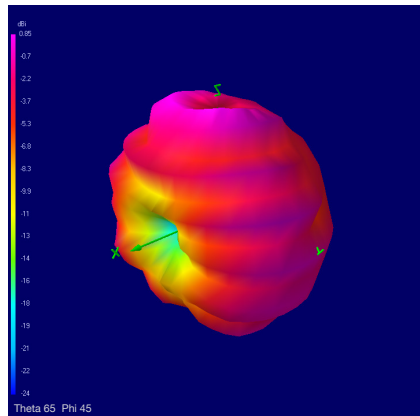
2460 MHz



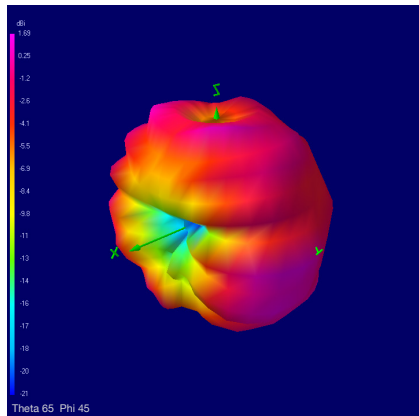
2500 MHz



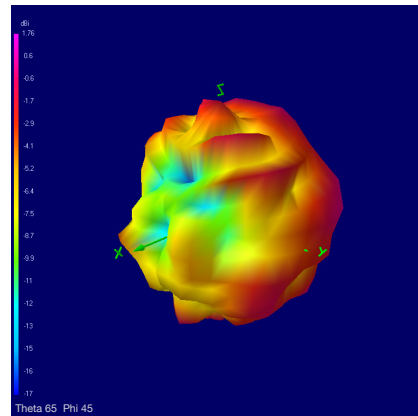
2600 MHz



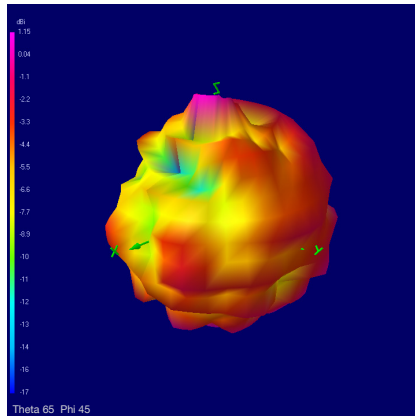
2700 MHz



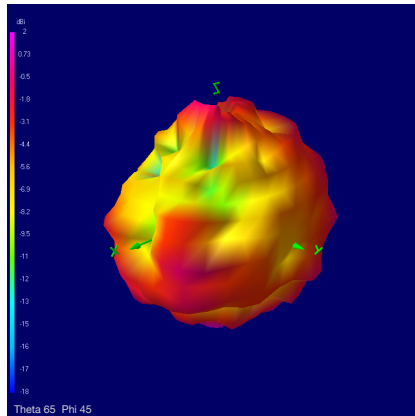
3300 MHz



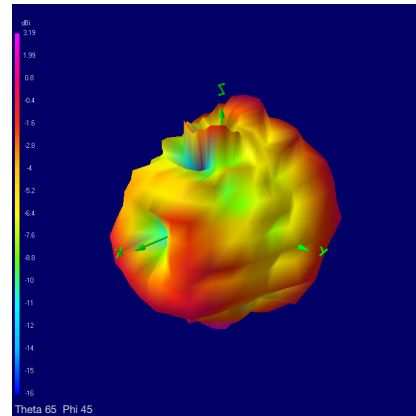
3400 MHz



3500 MHz



3600 MHz



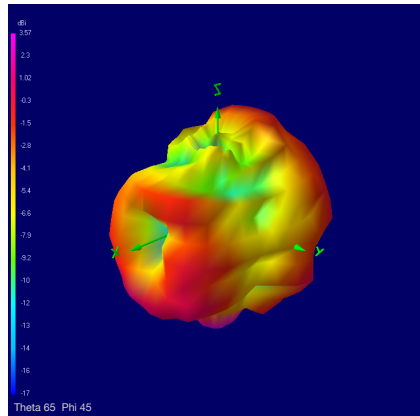


Alpha 11

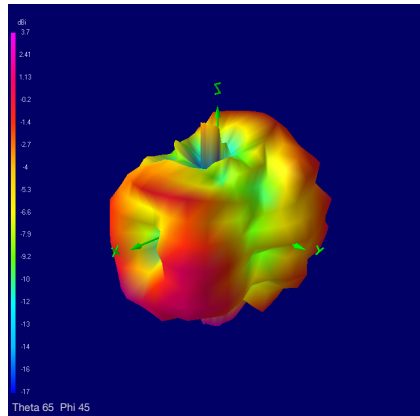
2G/3G/4G/5G & Dual Band WiFi ADHESIVE FLAT BLADE ANTENNA

3D Radiation Plots tested with 1 m cable

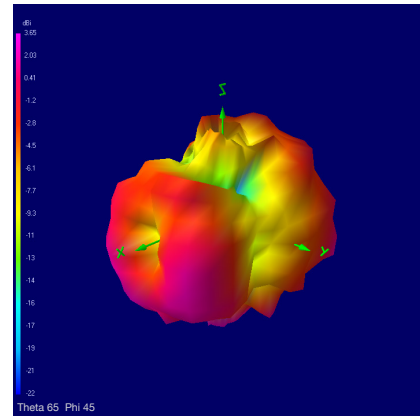
3700 MHz



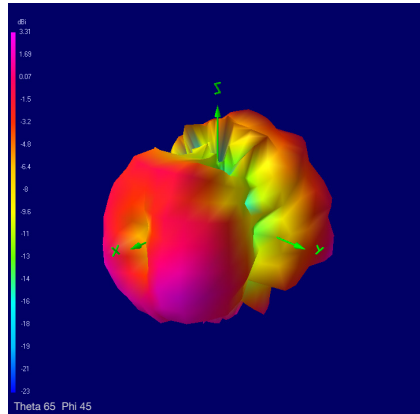
3800 MHz



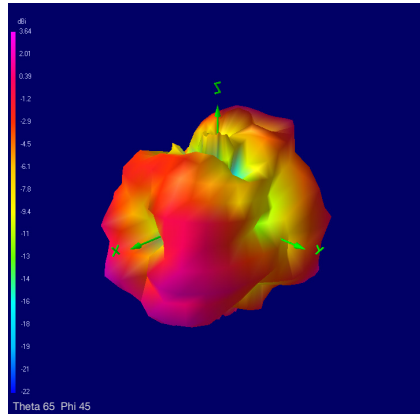
3900 MHz



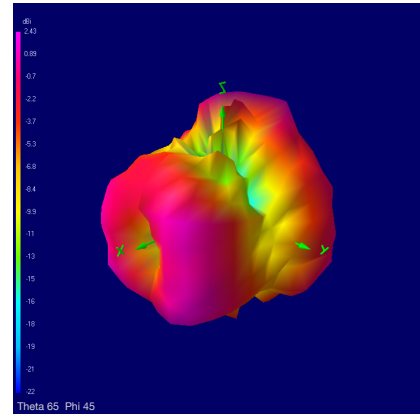
4000 MHz



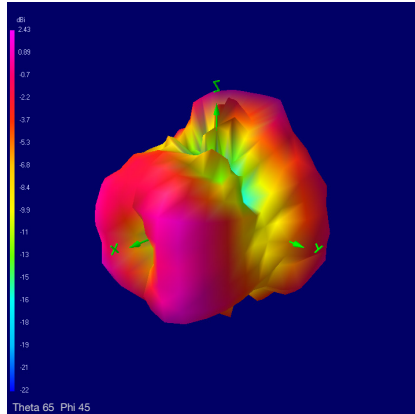
4200 MHz



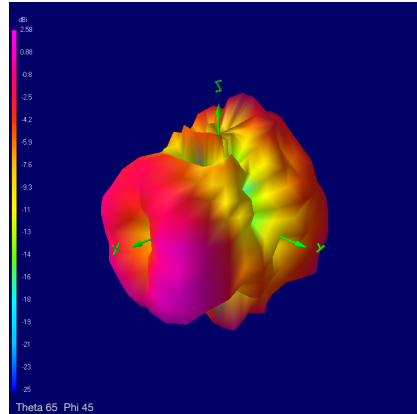
4400 MHz



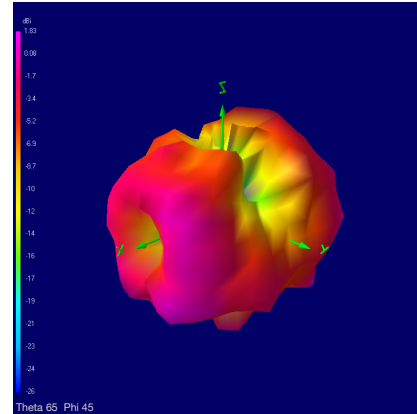
4600 MHz



4800 MHz



5000 MHz



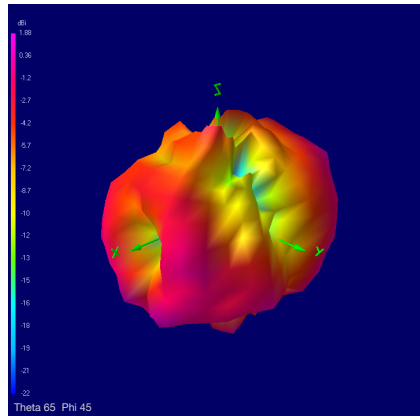


Alpha 11

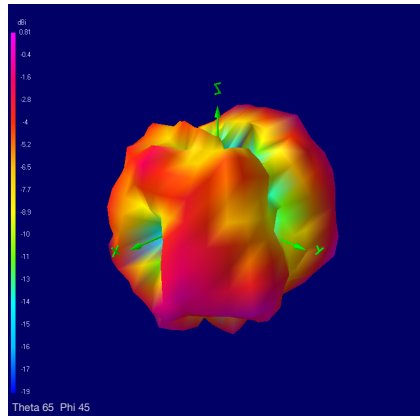
2G/3G/4G/5G & Dual Band WiFi ADHESIVE FLAT BLADE ANTENNA

3D Radiation Plots tested with 1 m cable

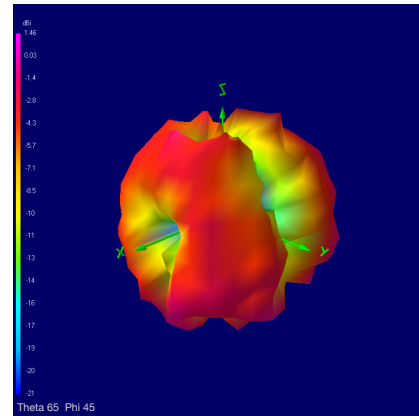
5200 MHz



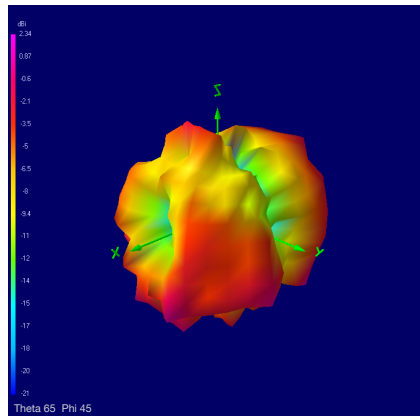
5400 MHz



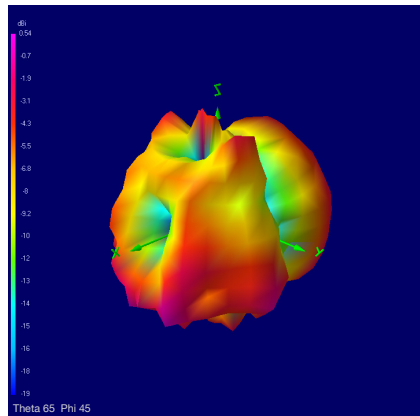
5600 MHz



5800 MHz



6000 MHz



Ordering Details

Part Number	Description
ALPHA11/1M/SMAM/S/S/20	2G/3G/4G/5G & DUAL BAND WIFI ADHESIVE FLAT BLADE ANTENNA SMA MALE 1m CABLE
ALPHA11/2.5M/SMAM/S/S/20	2G/3G/4G/5G & DUAL BAND WIFI ADHESIVE FLAT BLADE ANTENNA SMA MALE 2.5m CABLE